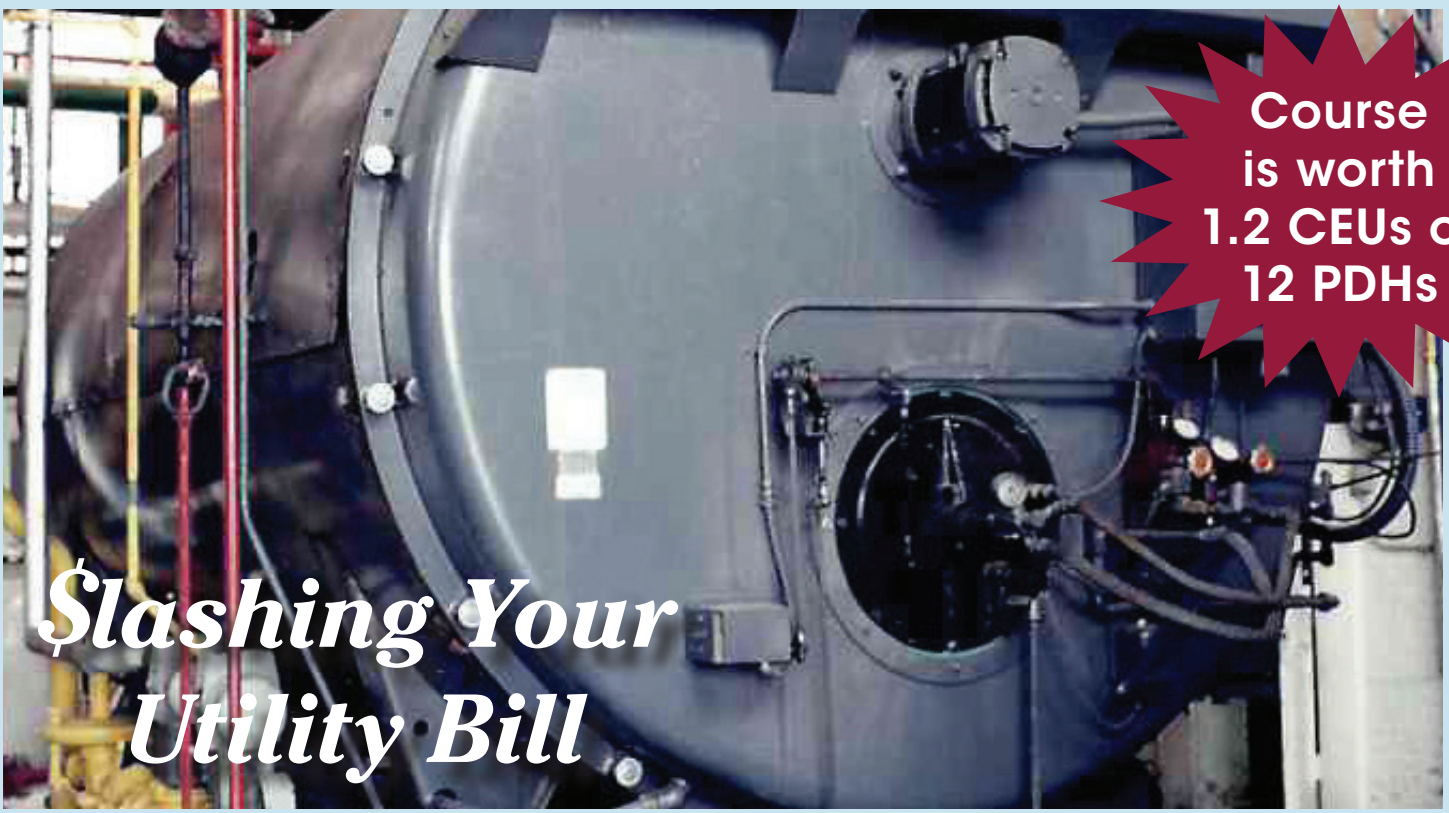
The Boiler Efficiency Institute Presents

Two-Day Virtual Workshop

Presented through Zoom on

HVAC Plant Improvement

For Industrial, Commercial and Institutional Facilities



May 18-19, 2022 • Wednesday & Thursday

The goal of the workshop is to train a range of South Carolina professionals such as boiler operators, technicians, licensed engineers and registered architects in energy efficiency measures.

Program Sponsored by the

ENERGY OFFICE

ENERGY.SC.GOV

Each attendee will receive a minimum of 12 hours of virtual training over two consecutive days. Certificates for Professional Development Hours will be presented to all participants upon successful completion of the workshop. **The workshop is offered for a low price of $25.**

REGISTRATION by phone: (334) 821-3095
by fax: (334) 887-3757 or email: melanie@boilerinstitute.com

Proven Methods

...To Reduce Steam Plant Costs with a Minimum of Up-Front Expenditure

A must source of practical information for both technical and non-technical personnel:

- **Plant and facility personnel**
- **mechanical equipment operators**
- **building owners/managers**
- **consulting engineers**
- **equipment/chemical vendors**
- **utility managers**
- **production managers**
- **A&E personnel**

Program Objective

The objective is to develop the participant's ability to recognize cost-saving measures in a steam plant and then to implement the necessary changes to realize these savings. The measures to be explored include low up-front cost, O&M procedures, fast payback heat recovery and cogeneration projects.

Additional objectives include showing participants the latest measurement instrumentation/techniques, safety equipment/testing, cleaning, storage, etc.

Background

The Boiler Efficiency Institute (BEI) has presented several hundred practical workshops on plant operation improvement for reducing costs over the last 25 years. Instructors spend as much time in boiler rooms as in classrooms.

Even in today's robust economy, savings from improving equipment performance offer exceptional opportunities to improve the bottom line. Unfortunately, many managers are not exploring energy-savings opportunities because of the perception that up-front costs are too high. BEI has updated its course to address these new economic requirements. This course will show the participants how to recognize operation and maintenance changes that require little up-front cost and then what changes to make. Additionally, heat recovery and cogeneration techniques yielding fast paybacks will be explained so that the participants know what methods are applicable and how to implement these methods.

The team has no vested interest in any product. All information will be presented from an objective viewpoint based on the experience and expertise of the lecturers. We feel that this is an important advantage over "free" programs presented by vendors.

Program Support

The South Carolina Energy Office has contracted with the Boiler Efficiency Institute to provide training in HVAC operation.

The course fee is normally $795, but due to the support of the ORS Energy Office, the program is offered at a reduced rate of $25 to residents and employees of South Carolina. Class is limited to 30 attendees. Please register early to ensure your space!

RESOURCE MATERIALS

Each participant will be provided a textbook which will serve as a valuable resource guide after attending the course. The book retails for $25 which is the total cost of the course! **Any materials presented will be generic in nature. No individual company or particular product will be promoted or endorsed.**

Workshop Outline

OVERVIEW OF PROGRAM

Reducing Maintenance Cost
Reducing Operating Cost
Meeting Comfort Requirements
Meeting Air Quality Standards

REFRIGERANT STATUS

Environmental Effects · New Refrigerants/Equipment
Phase Out of Conventional Refrigerants
Recovery, Handling, Storage of Refrigerants

DESCRIPTION OF HVAC GENERATING SYSTEMS

(Operation/Advantages/Disadvantages)

Generating Equipment
- · Absorption chillers · Thermal storage
- · Centrifugal chillers · Boilers · Roof-Top units
- · Cooling towers · Evaporative cooling

WAYS TO REDUCE HVAC GENERATING COSTS

Heat Recovery · Reduce Scale & Corrosion
Improve Characteristics of Working Fluid
Load Management
Select Optimum Prime Mover/Fuel
Reduce Electrical Cost
- · Power factor correction · Demand charges · Metering
- · Variable speed drives · High efficiency motors

Improve Turbine Performance
- · Fouling · Back pressure · Throttle control

Raise Chilled Water Temperature
Control Chilled Water Flow Rate
Improve Cooling Tower Performance

DESCRIPTION OF HVAC DISTRIBUTION SYSTEMS

Distribution Systems
- · Single zone · Variable air volume · Thermal reheat
- · Fan coil · Multizone · Others · Dual duct

Control Systems
- · Conventional · EMS · OAM/TC

WAYS TO REDUCE HVAC DISTRIBUTION COSTS

Control Outside Air · Control Ventilation · Insulate
Balance Air Handling Systems
Reduce End Use
- · External load reduction · Night-time set back
- · Thermal storage · Recirculation of internal heating/cooling

Avoid Simultaneous Heating/Cooling · Others
Instrumentation · Water and Air Quality · Maintenance

WATER QUALITY

Chilled Water · Condenser Water · Boiler Water/Steam

MEASURING & SOLVING INDOOR AIR QUALITY PROBLEMS

Identifying Indoor Air Quality Problems
Eliminating Indoor Air Quality Problems
Complying with new ASHRAE Ventilation

MEASUREMENT OF HVAC SYSTEM PERFORMANCE

Load and Efficiency
- · Cooling towers · Motors · Fans
- · Chillers · Pumps · Heat exchangers

BALANCING

Water Side and Air Side · Instrumentation
Techniques for Balancing Efficiently

PROGRAM DIRECTOR:

Melanie W. Knause
Boiler Efficiency Institute, LLC
P.O. Box 2255 · Auburn, AL 36831-2255
Phone (334) 821-3095 · FAX (334) 887-3757
email melanie@boilerinstitute.com

Four Ways To Register:

1. By Mail: Send Registration Form to Program Director, B.E.I., P.O. Box 2255, Auburn, AL 36831-2255.

2. By Phone: (334) 821-3095.

3. By FAX: (334) 887-3757.

4. By email: Send all the information requested in the registration form to melanie@boilerinstitute.com.

Confirmation will be issued after payment is received. Zoom link for class participation will be sent to email on registration. Class size is limited.

Registration Fee

Registration fee is $25 and includes registration and textbook. The textbook will be mailed before the course takes place. A Certificate of Participation will be mailed after the course to each registrant who attends both days. The certificate will state the attendee earned 1.2 CEUs or 12 PDHs.

Seminar Hours

Seminar Hours are 8:00 a.m. to 4:00 p.m. EST both days.

Cancellation, Substitution and Transfer Policy

If you are unable to attend the course, you can substitute another person in your place.

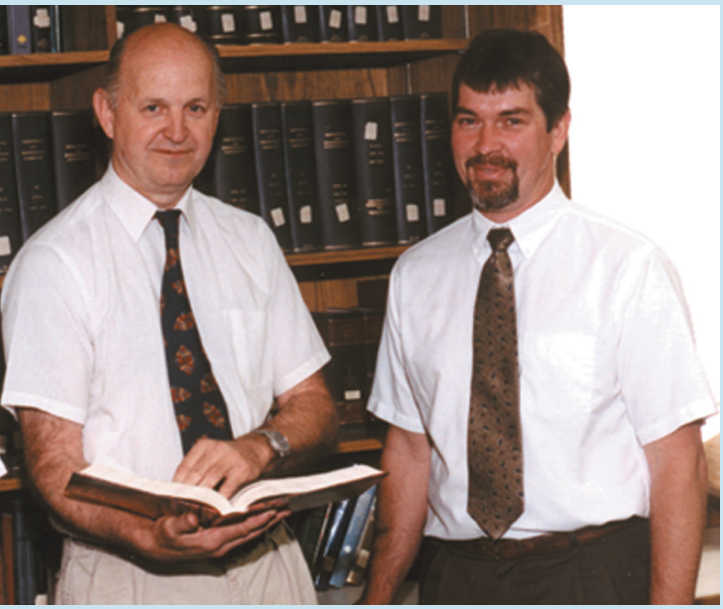
Cancellations must be made 14 days before the program date for full refund.

Instructors

Tom Burch, Ph.D., P.E.
Professor of Mechanical Engineering, Auburn University

David Dyer, Ph.D., P.E.
Professor of Mechanical Engineering, Auburn University

David Burch, M.S.M.E., P.E.
Engineer, Boiler Efficiency Institute, LLC



The instructors have a combined total of over 100 years of experience with facilities in operation, design, testing and trouble-shooting. They have written twelve practical books detailing this experience, as well as numerous technical papers and reports. They have presented more than 500 workshops concerned with reducing facility operating costs. During this period, they have gained extensive, hands-on experience in evaluating **money–saving opportunities** at hundreds of facilities.

The instructors are known for their teaching style which combines a sound technical presentation in an enjoyable and easy-to-understand approach. The program will appeal strongly to all persons involved with facilities regardless of their educational and experience background.

REGISTRATION FORM

May 18-19, 2022 (Wednesday & Thursday)
Virtual HVAC Course

*Checks Payable to
BOILER EFFICIENCY INSTITUTE, LLC
P.O. Box 2255
Auburn, AL 36831-2255

Fee: $25 ❑ Check Enclosed*

Credit Card: ❑ MasterCard ❑ Visa ❑ AmEx Expiration Date: _____

Card No. _____

CVV Security Code _____ Billing Zip Code _____

Name of Attendee _____

Company _____

Address _____

City _____ State _____ Zip _____

E-mail _____

Phone _____ FAX _____